

CLAIMS

What is claimed is:

- 1 1. A current controlled voltage regulator, comprising:
2 a control circuit coupled to receive first and second signals indicative of a
3 drive level of the voltage regulator and coupled to provide a control signal in
4 response to a difference between the first and second signals; and
5 a conduction device coupled to receive the control signal and coupled to
6 decrease conduction if the difference increases and increase conduction if the
7 difference decreases, wherein the change in conduction is substantially
8 proportional to the difference between the first and second signals.
- 1 2. The current controlled voltage regulator of claim 1, wherein the
2 control circuit comprises an operational amplifier.
- 1 3. The current controlled voltage regulator of claim 1, wherein the
2 control circuit comprises:
3 a first conversion device coupled to receive the first signal and coupled to
4 provide a digital representation of the first signal;
5 a second conversion device coupled to receive the second signal and
6 coupled to provide a digital representation of the second signal; and
7 a third conversion device coupled to receive the first and second digital
8 representations and coupled to provide a difference between the first and second
9 digital representations.
- 1 4. The current controlled voltage regulator of claim 1, wherein the
2 conduction device comprises a transistor having a first conduction terminal

3 coupled to receive the first signal and a control terminal coupled to receive the
4 control signal.

1 5. The current controlled voltage regulator of claim 4, wherein the
2 transistor includes a field effect transistor.

1 6. An article of manufacture comprising a program storage medium
2 readable by a computer, the medium tangibly embodying one or more programs of
3 instructions executable by the computer to perform a method of operating a
4 current controlled voltage regulator, the method comprising:

5 receiving first and second signals indicative of a drive level of the voltage
6 regulator;

7 computing a difference between the first and second signals; and

8 controlling a conductive state of a conduction device in response to the
9 difference, wherein the conductive state is changed substantially in proportion to
10 the difference.

1 7. The article of manufacture of claim 6, wherein receiving first and
2 second signals comprises using a resistive component to develop a potential
3 difference between the first and second signals, wherein the potential difference is
4 indicative of the drive level.

1 8. The article of manufacture of claim 6, wherein computing the
2 difference comprises:

3 receiving the first signal at an input of a first conversion device;

4 receiving the second signal at an input of a second conversion device; and

5 generating the difference at the output of a third conversion device.

1 9. A method of operating a current controlled voltage regulator,
2 comprising:
3 receiving first and second signals indicative of a drive level of the voltage
4 regulator;
5 measuring a difference between the first and second signals; and
6 controlling a conductive state of a conduction device in response to the
7 difference, wherein the conductive state is changed in proportion to the difference.

1 10. The method of claim 9, wherein receiving first and second signals
2 comprises using a resistive component to develop a potential difference between
3 the first and second signals, wherein the potential difference is indicative of the
4 drive level.

1 11. The method of claim 9, wherein measuring the difference comprises:
2 receiving the first signal at a first input of an amplifier;
3 receiving the second signal at a second input of the amplifier; and
4 generating the difference at the output of the amplifier.

1 12. The method of claim 9, wherein measuring the difference comprises:
2 receiving the first signal at an input of a first conversion device;
3 receiving the second signal at an input of a second conversion device; and
4 generating the difference at the output of a third conversion device.

1 13. In a power supply, a voltage regulator controlling output current to
2 substantially eliminate voltage variations, the voltage regulator comprising:
3 a current control circuit coupled to receive first and second signals
4 indicative of a drive level of the voltage regulator and coupled to provide a control
5 signal in response to a difference between the first and second signals; and

6 a current conduction device coupled to receive the control signal and
7 coupled to increase current conduction if the difference decreases and decrease
8 current conduction if the difference increases, wherein the change in conduction is
9 substantially proportional to the difference between the first and second signals.

1 14. The current controlled voltage regulator of claim 13, wherein the
2 current control circuit comprises an operational amplifier.

1 15. The current controlled voltage regulator of claim 13, wherein the
2 current control circuit comprises:

3 a first conversion device coupled to receive the first signal and coupled to
4 provide a digital representation of the first signal;

5 a second conversion device coupled to receive the second signal and
6 coupled to provide a digital representation of the second signal; and

7 a third conversion device coupled to receive the first and second digital
8 representations and coupled to provide a signal substantially proportional to the
9 difference between the first and second digital representations.

1 16. The current controlled voltage regulator of claim 13, wherein the
2 current conduction device comprises a transistor having a first conduction
3 terminal coupled to receive the first signal and a control terminal coupled to
4 receive the control signal.

1 17. The current controlled voltage regulator of claim 16, wherein the
2 transistor includes a field effect transistor.

1 18. A current controlled voltage regulator, comprising:
2 a control means coupled to receive first and second signals indicative of a
3 drive level of the voltage regulator and coupled to provide a control signal in
4 response to a difference between the first and second signals; and
5 a conduction means coupled to receive the control signal and coupled to
6 increase conduction if the difference decreases and decrease conduction if the
7 difference increases, wherein the change in conduction is substantially
8 proportional to the difference between the first and second signals.

1 19. The current controlled voltage regulator of claim 18, wherein the
2 control means comprises an operational amplifier.

1 20. The current controlled voltage regulator of claim 18, wherein the
2 control means comprises:

3 a first conversion means coupled to receive the first signal and coupled to
4 provide a digital representation of the first signal;

5 a second conversion means coupled to receive the second signal and
6 coupled to provide a digital representation of the second signal; and

7 a third conversion means coupled to receive the first and second digital
8 representations and coupled to provide a signal substantially proportional to the
9 difference between the first and second digital representations.

1 21. The current controlled voltage regulator of claim 18, wherein the
2 conduction means comprises a transistor having a first conduction terminal
3 coupled to receive the first signal and a control terminal coupled to receive the
4 control signal.

- 1 22. The current controlled voltage regulator of claim 21, wherein the
2 transistor includes a field effect transistor.

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